

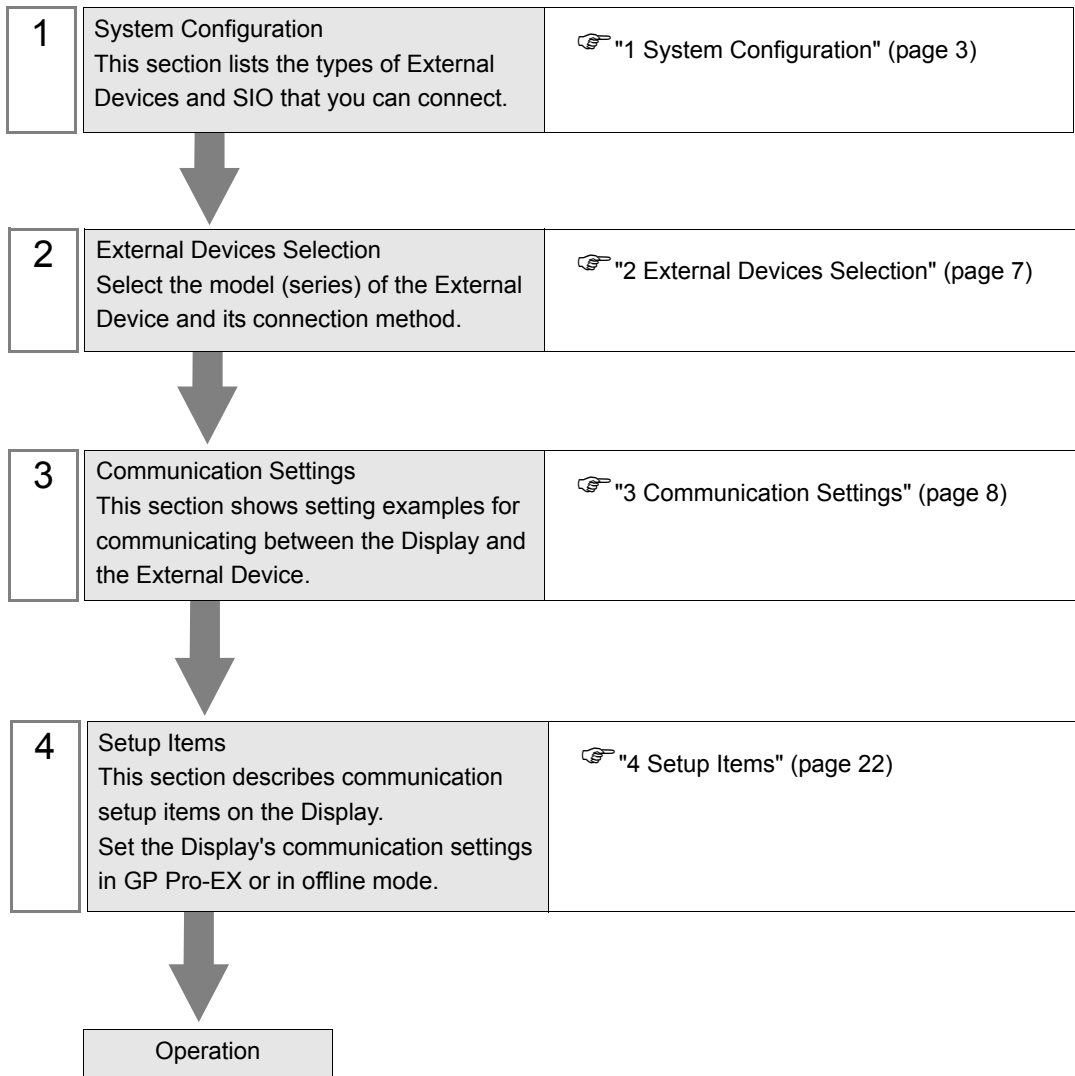
MODBUS TCP Master Driver

| | | |
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Introduction

This manual describes how to connect the Display and the External Device (target PLC).

In this manual, the connection procedure is described in the sections identified below:



1 System Configuration

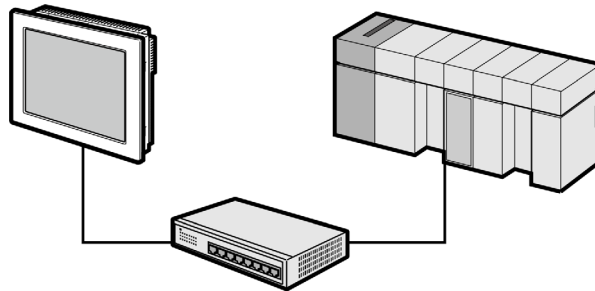
The system configuration in the case when the External Device and the Display are connected is shown.

1.1 Schneider Electric SA External Device

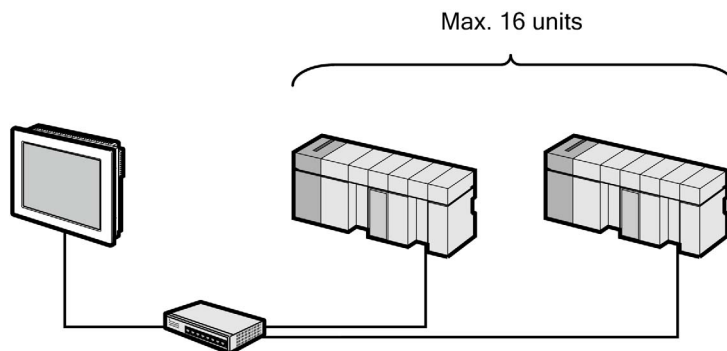
| Driver | CPU | Link I/F | SIO Type | Setting Example |
|---------|--|---|---|--------------------------------|
| Premium | TSX P57 103M TSX P57 153M TSX P57 203M TSX P57 253M TSX P57 303M TSX P57 353M TSX P57 453M | TSX ETY 4102 TSX ETY 4103 TSX ETY 5102 TSX ETY 5103 TSX WMY 100 M | Ethernet (Modbus TCP) | Setting Example 1 (page 8) |
| | TSX P57 2623M TSX P57 2823M TSX P57 3623M TSX P57 4823M | ----- | | Setting Example 2 (page 10) |
| Quantum | 140 CPU 113 02 140 CPU 113 03 140 CPU 434 12A 140 CPU 534 14A | 140 NOE 771 00 140 NOE 771 10 140 NWM 100 00 | | Setting Example 3 (page 12) |
| | 140 CPU 651 50 140 CPU 651 60 | ----- | | |
| M221 | TM221CE16R TM221CE16T TM221CE16U TM221CE24R TM221CE24T TM221CE24U TM221CE40R TM221CE40T TM221CE40U | ----- | Ethernet (SoMachine Basic Syntax) | Setting Example 6 (page 19) |
| | TM221ME16R TM221ME16RG TM221ME16T TM221ME16TG TM221ME32TK | ----- | | |

■ Connection Configuration

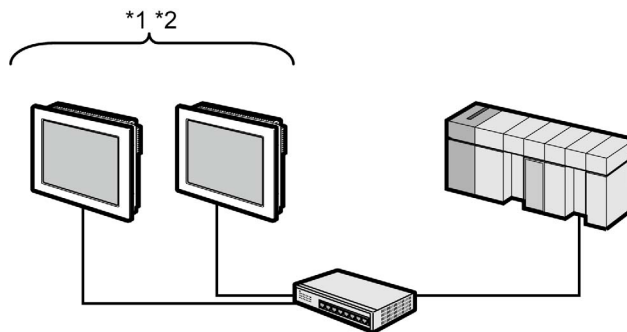
- 1:1 Connection



- 1:n Connection



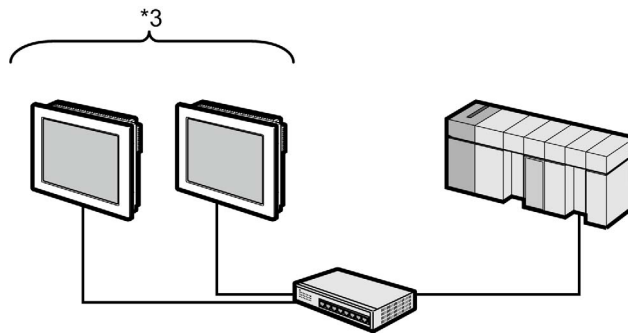
- n:1 Connection (Premium Series)



Maximum number of Display are 4.

- *1 You can connect max 1 unit of TSXP571**/TSXP572**, max 3 units of TSXP573**, max 4 units of TSXP574**.
- *2 Number of connecting units is the unit number when connecting the Display only. Number of connecting Display will be limited by the number of other External Devices which is connected by Ethernet.

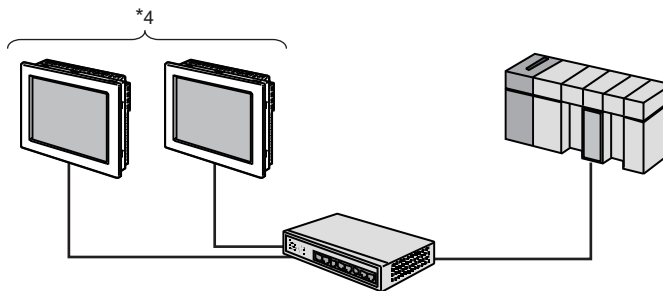
- n:1 Connection (Quantum Series)



Maximum number of Display are 32.

- *3 Number of connecting units is the unit number when connecting the Display only. Number of connecting Display will be limited by the number of other External Devices which is connected by Ethernet.

- n:1 Connection (M221 Series)



Maximum number of Display are 8.

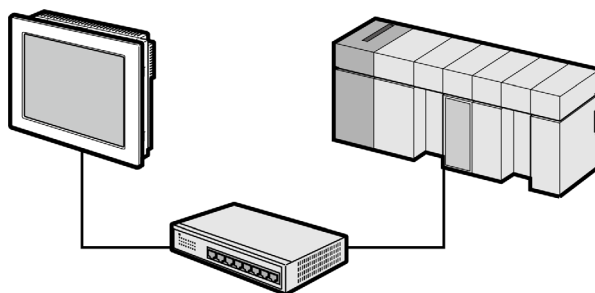
- *4 Number of connecting units is the unit number when connecting the Display only. Number of connecting Display will be limited by the number of other External Devices which is connected by Ethernet.

1.2 YOKOGAWA Electric Corporation External Device

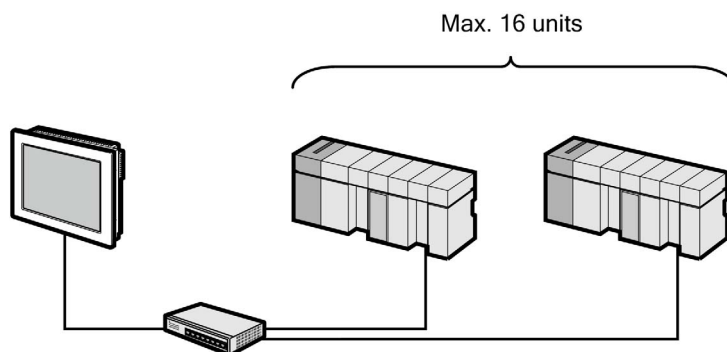
| Driver | CPU | Link I/F | SIO Type | Setting Example |
|--------|--------------|---|-----------------------|-----------------------------|
| FCN | NFCP100-S00 | Network interface on CPU | Ethernet (Modbus TCP) | Setting Example 5 (page 16) |
| FCJ | NFJT100-S100 | Control network interface on the controller | | Setting Example 5 (page 16) |

■ Connection Configuration

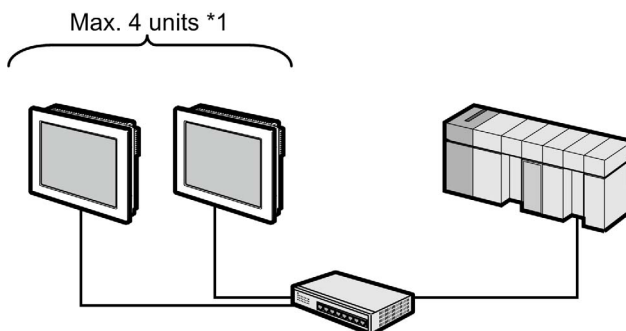
- 1:1 Connection



- 1:n Connection



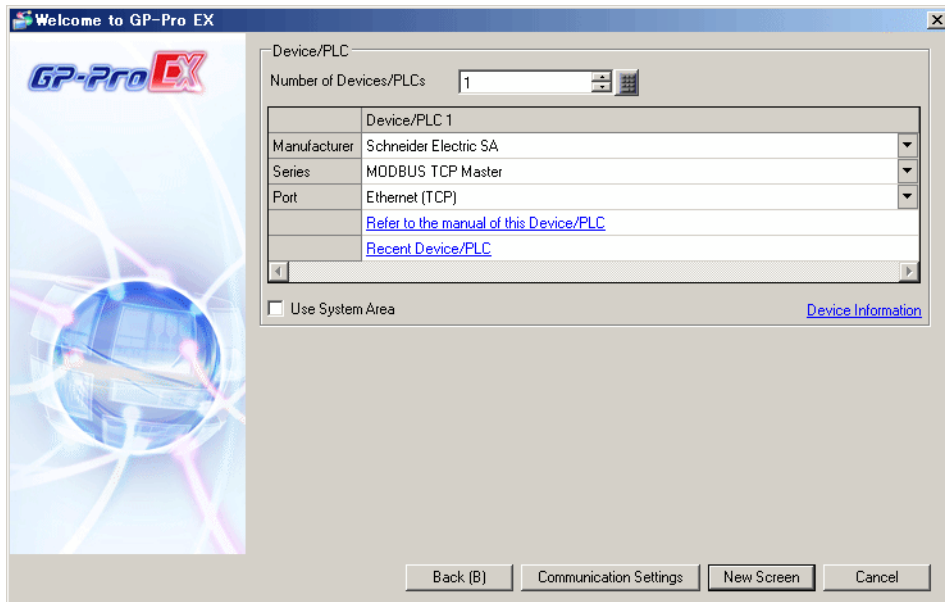
- n:1 Connection



*1 Number of connecting units is the unit number when connecting the Display only. Number of connecting Display will be limited by the number of other External Devices which is connected by Ethernet.

2 External Devices Selection

Select the External Device to be connected to the Display.



| Setup Items | Setup Description |
|------------------------|---|
| Number of Devices/PLCs | Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display. |
| Manufacturer | Select the manufacturer of the External Device to connect. Select "Schneider Electric SA". |
| Series | Select the External Device model (series) and the connection method. Select "MODBUS TCP Master". In System configuration, make sure the External Device you are connecting is supported by "MODBUS TCP Master". ☞ "1 System Configuration" (page 3) |
| Port | Select the Display port to connect to the External Device. |
| Use System Area | Check this option to synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the External Device's ladder program to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This feature can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "System Settings [Display Unit] - [System Area] Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings" |

3 Communication Settings

Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Timeout (sec)

Retry


Wait To Send (ms)

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

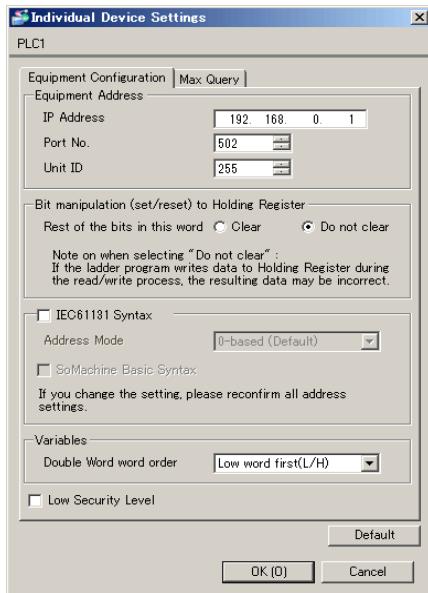
| No. | Device Name | Settings | Add Indirect Device |
|----------------------------------|-----------------------------------|--|----------------------------------|
| <input type="button" value="1"/> | <input type="text" value="PLC1"/> | <input type="text" value="IP Address=192.168.000.001,Port No.=502,Unit ID=255"/> | <input type="button" value="+"/> |

◆ Device Setting

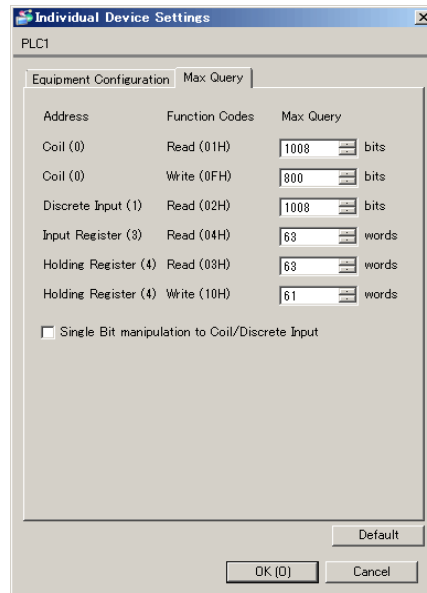
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings]  .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration]Tab



[Max Query] tab



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software "PL7 PRO" for communication settings.

Execute "Hardware Configuration" from "Configuration" in "Application Browser" of "PL7 PRO" to display the "Configuration" dialog box. Double-click the empty slot to display the "Add Module" dialog box. Select "Communication" in the "Family" field. Then select "Link Unit" display in the "Module" field to display the screen for setting.

| Setup Items | Setup Description |
|--------------------------|---------------------|
| IP address configuration | Configured (Fixed) |
| IP address | Optional |
| Ethernet configuration | Ethernet II (Fixed) |

◆ Notes

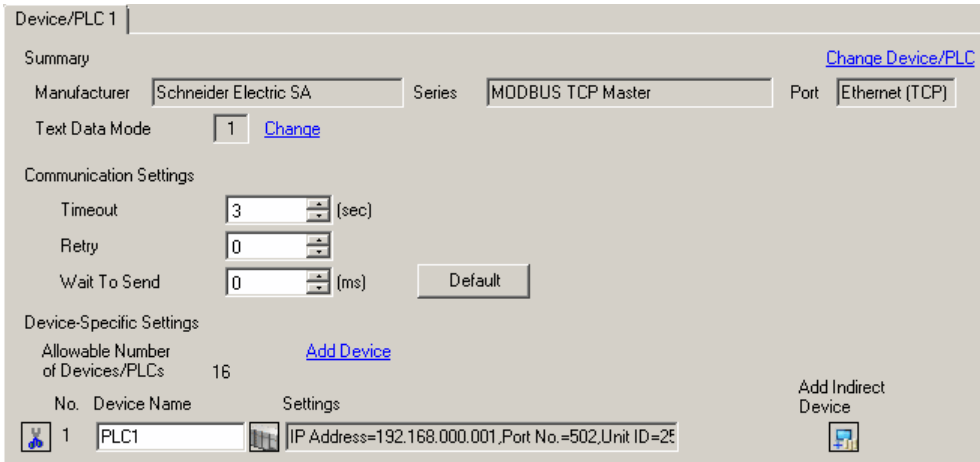
- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

3.2 Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

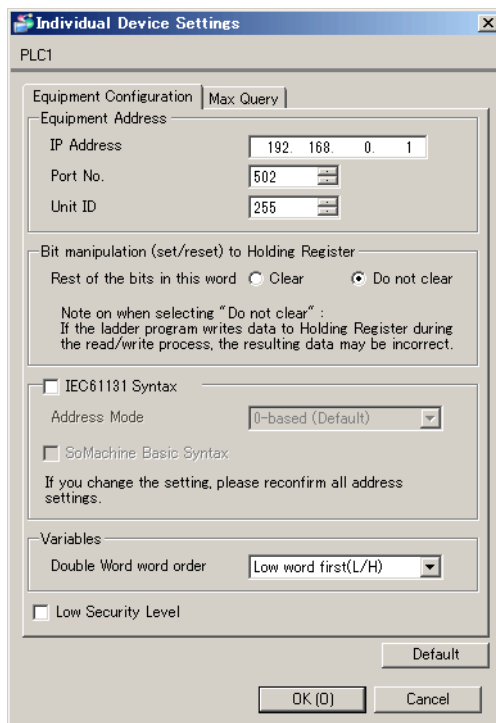


◆ Device Setting

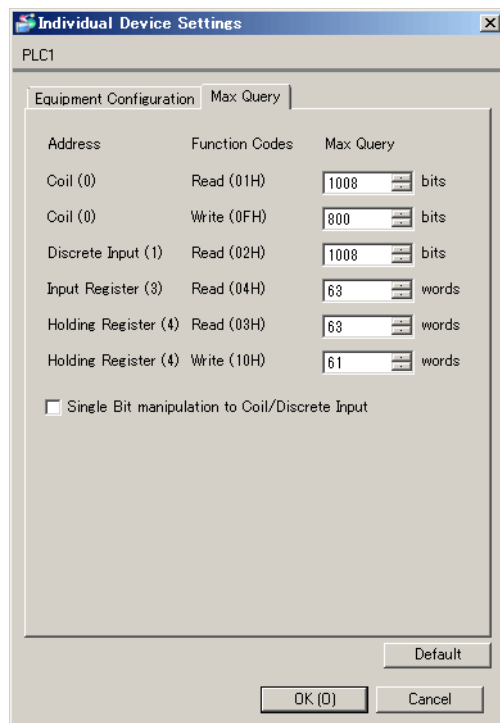
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration]Tab



[Max Query] tab



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software "PL7 PRO" for communication settings.

For setting, go to "Configuration" in "Application Browser" of "PL7 PRO", "Hardware Configuration", and "ETY PORT" in this order.

| Setup Items | Setup Description |
|--------------------------|---------------------|
| IP address configuration | Configured (Fixed) |
| IP address | Optional |
| Ethernet configuration | Ethernet II (Fixed) |

◆ Notes

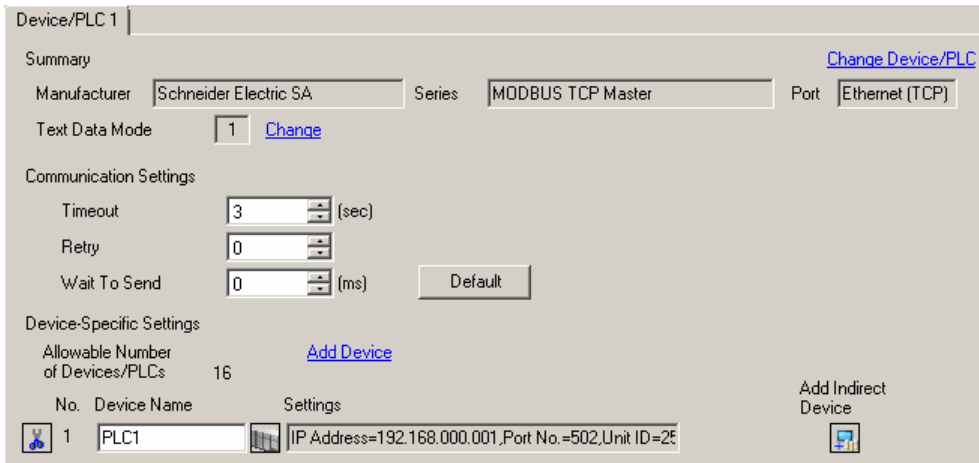
- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC]..

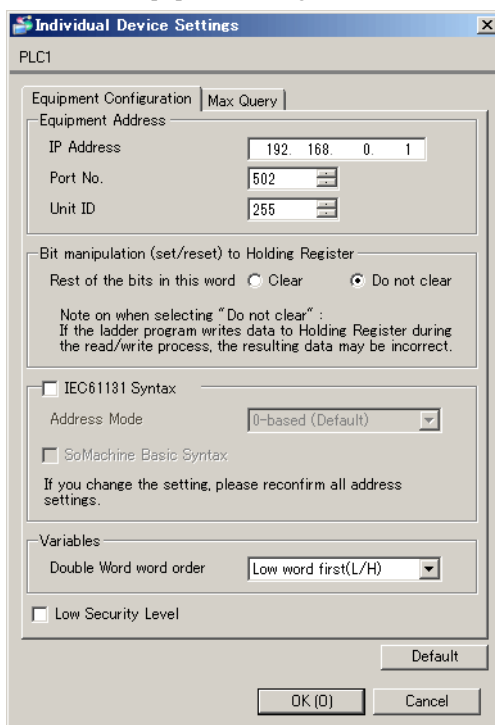


◆ Device Setting

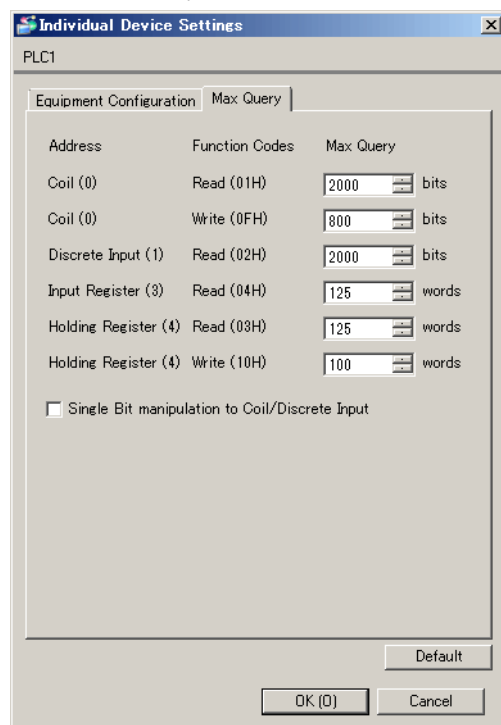
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration] tab



[Max Query] tab



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software "Concept" for communication settings.

After selecting PLC for the Quantum Series in "PLC Selection" of "Concept", select "Select Extensions" from "Config Extension". Set the number of Link Unit connected to "TCP/IP Ethernet" in the "Select Extensions" dialog box displayed next. Then, select "Ethernet /I/O Scanner" in "Config Extensions" and perform setting in the "Ethernet /I/O Scanner" dialog box.

| Setup Items | Setup Description |
|------------------------|----------------------------|
| Ethernet configuration | Specify IP Address (Fixed) |
| Internet Address | Optional |
| Frame Type | Ethernet II (Fixed) |

◆ Notes

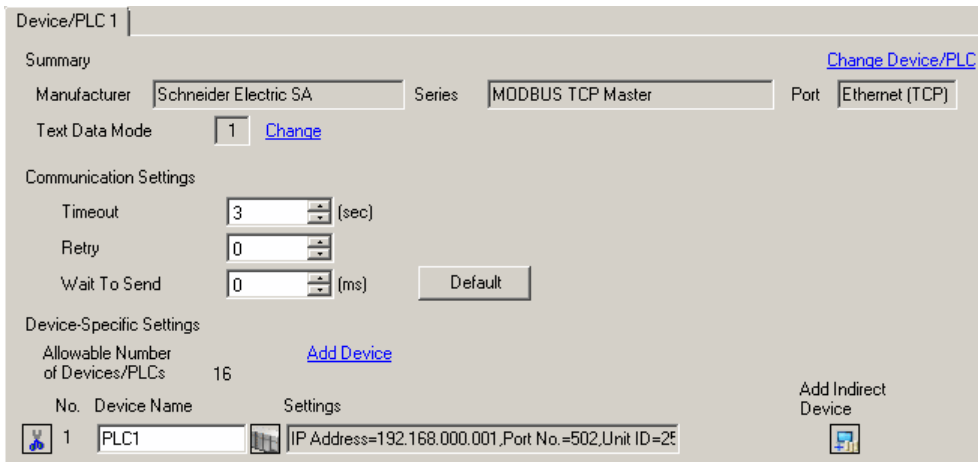
- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

3.4 Setting Example 4

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

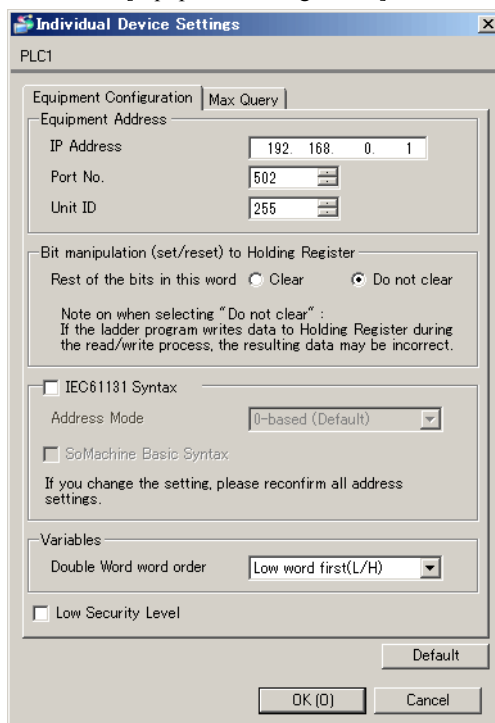


◆ Device Setting

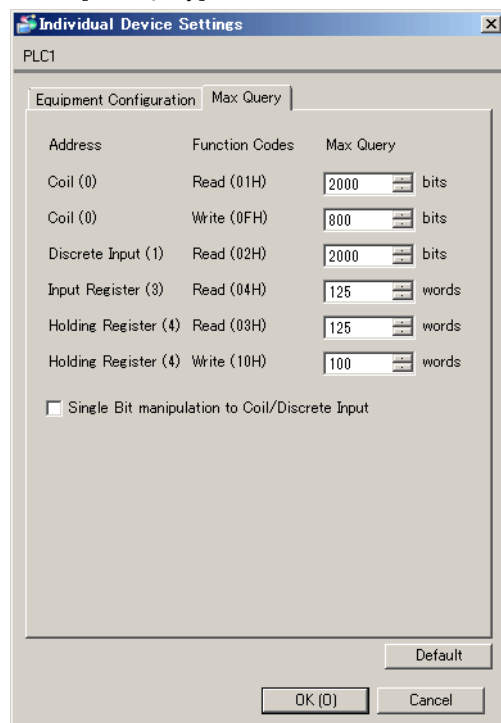
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration] tab



[Max Query] tab



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software "Unity Pro XL" for communication settings.

Startup "Unity Pro XL". Select "New Project" and specify CPU (Quantum Series, 140 CPU 651 *0). Go to "Communication" in "Project Browser", and right-click on "Network" to select "New Network...". Then the Add Network window is displayed.

Set "List of available Networks" in the "Add Network" window to "Ethernet". Put the optional name in "Change Name" and press OK.

Check that the name you put in "Change Name" is displayed under "Network", "Communication" of "Project Browser". Double-click the displayed name to display the "(Your optional name) window" for setting.

| Setup Items | Setup Description |
|--------------------------|---------------------|
| IP address configuration | Configured (Fixed) |
| IP address | Optional |
| Ethernet configuration | Ethernet II (Fixed) |

◆ Notes

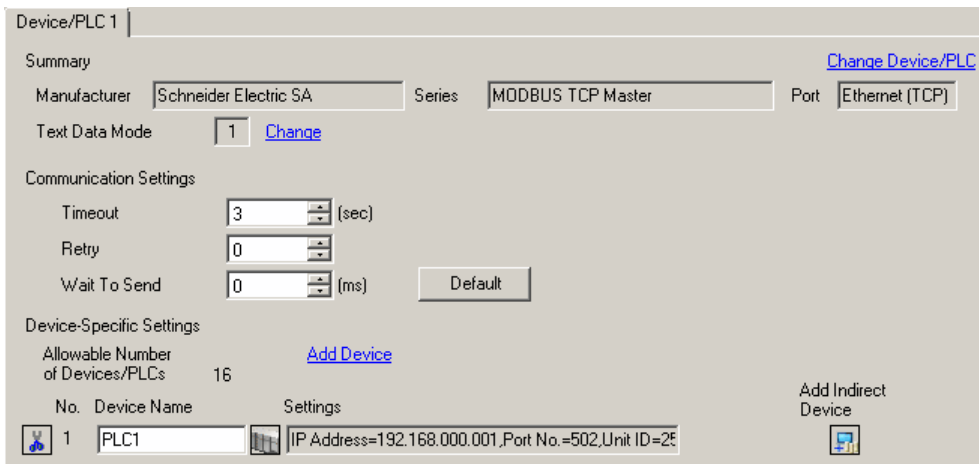
- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

3.5 Setting Example 5

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC]..

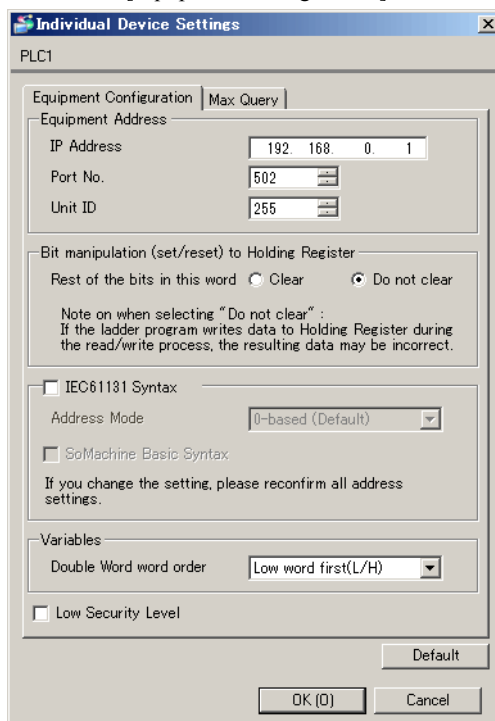


◆ Device Setting

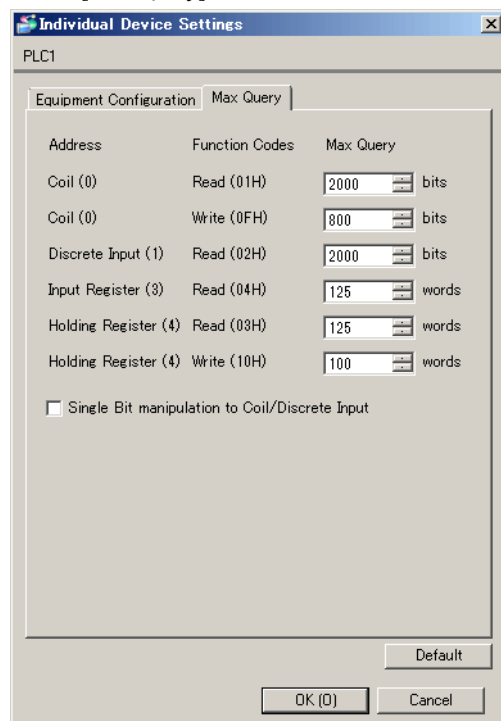
To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration] tab



[Max Query] tab



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software (Logic Designer) for communication settings. Refer to your External Device manual for details.

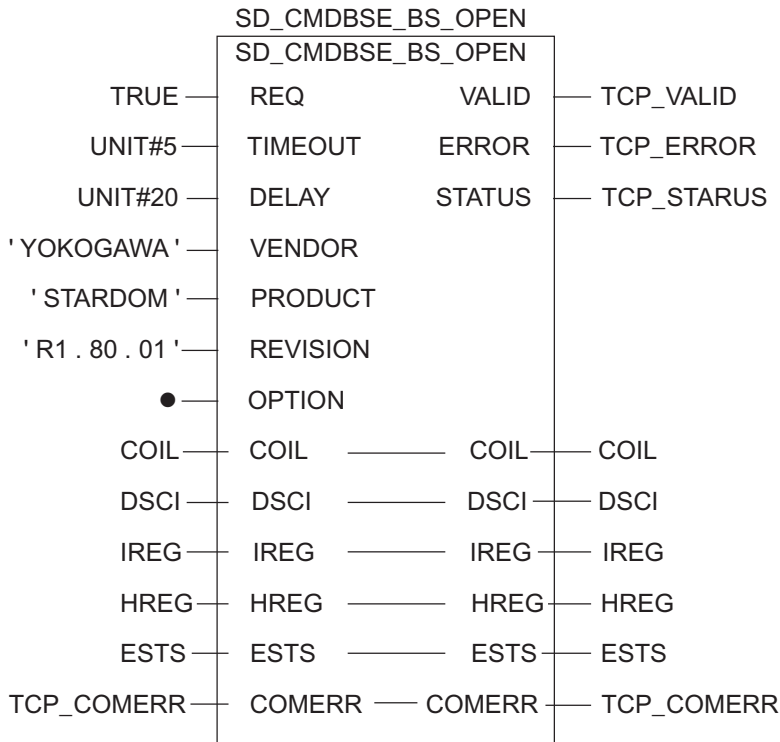
- 1 Start up the ladder software.
- 2 To start the MODBUS communication (RTU mode) slave function, create the control logic. For the example of control logic, refer to "Control Logic Example".

☞ ◆ Control Logic Example (page 17)

- 3 Select [Rebuild Project] from the [Build] menu.
- 4 Double-click [Target Setting] in the project tree Window to display the [Target] dialog box.
- 5 Enter "192.168.0.1" in [Host Name/IP Address].
- 6 Click [OK].
- 7 Download the communication settings to the External Device.
- 8 Reboot the External Device.

◆ Control Logic Example

To connect the Display to the External Device, the control logic is required.
The control logic example is shown below.



◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

3.6 Setting Example 6

■ Settings of GP-Pro EX


◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC]..

NOTE

- Set [Text Data Mode] to 2.

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

◆ Notes

- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Set the IP address of the External Device under [Individual Device Settings].
- You need to set the IP address of the Display in its offline mode.

■ External Device Settings

Use the ladder software "SoMachine Basic" for communication settings.

When using LAN:

- 1 Start up the ladder software.
- 2 Click the [Commissioning] tab.
- 3 The IP address of the detected External Device is displayed in [Ethernet Devices]. Select the IP address of the External Device to configure.
- 4 From [Ethernet Devices], click the wrench icon to change the setup value.
- 5 Set [Ethernet] as follows.

| Setup Items | Setup Description |
|-----------------|-------------------|
| IP Mode | Fixed IP address |
| IP address | 192.168.0.1 |
| Subnet mask | 255.255.255.0 |
| Gateway address | 0.0.0.0 |

- 6 Select the [Write to post configuration file (machine.cfg)] check box, and click [Apply].

When using USB:

- 1 Start up the ladder software.
- 2 From the [Configuration] tab, select [ETH1].
- 3 Set [Ethernet] as follows.

| Setup Items | Setup Description |
|-----------------------|-----------------------|
| IP Mode | Static IP address |
| IP address | 192.168.0.1 |
| Subnet mask | 255.255.255.0 |
| Gateway address | 0.0.0.0 |
| Modbus server enabled | Select the check box. |

- 4 Download the communication settings to the External Device.
- 5 Reboot the External Device.

◆ Notes

- After configuring the External Device over LAN, set up is not possible over USB.
To use USB for set up, from the [Commissioning] tab, select [Erase in controller] from the [Memory management] and delete the "machine.cfg" file.
- Check with the network administrator about the IP address. Do not duplicate IP addresses.
- Please refer to the manual of the ladder software for details on other settings.

4 Setup Items

Set up the Display's communication settings in GP Pro-EX or in the Display's offline mode.

The setting of each parameter must match that of the External Device.

☞ "3 Communication Settings" (page 8)

NOTE

- You need to set the IP address of the Display in its offline mode.

Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings | Add Indirect Device |
|----------------------------------|-----------------------------------|--|--|
| <input type="button" value="1"/> | <input type="text" value="PLC1"/> | <input type="text" value="IP Address=192.168.000.001,Port No.=502,Unit ID=255"/> | <input type="button" value="Add Indirect Device"/> |


| Setup Items | Setup Description |
|--------------|--|
| Timeout | Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device. |
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting the next commands. |

NOTE

- Refer to the GP-Pro EX Reference Manual for Indirect Device.

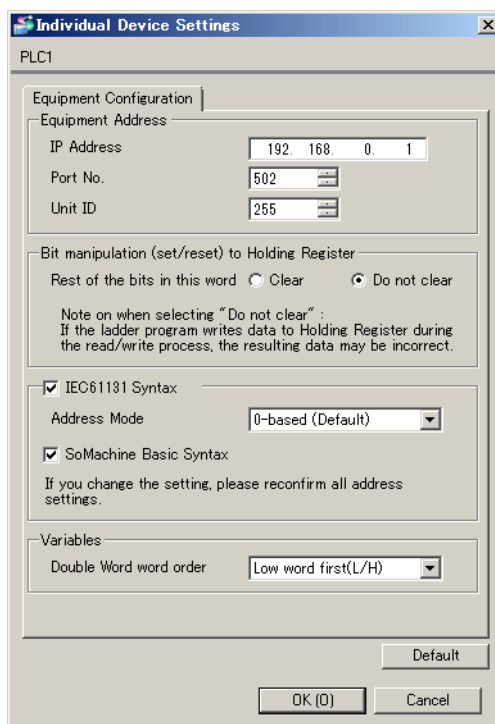
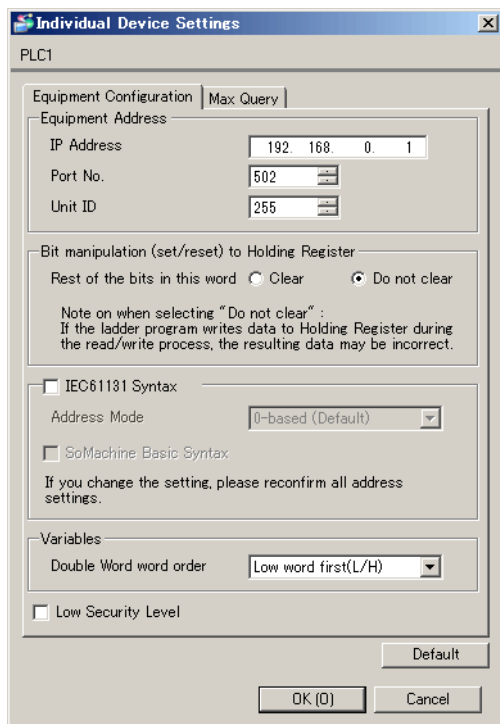
Cf. GP-Pro EX Reference Manual "Changing the Device/PLC at Runtime (Indirect Device)"

■ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings]  .

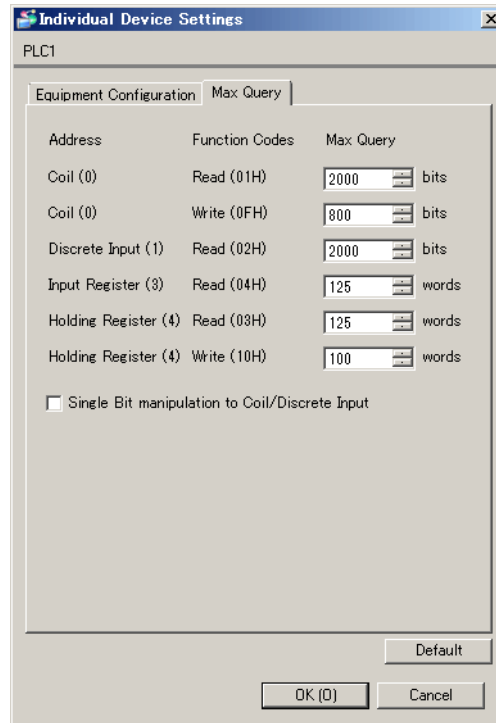
To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

[Equipment Configuration]Tab



| Setup Items | Setup Description |
|---|--|
| IP Address | Set IP address of the External Device. NOTE • Check with the network administrator about the IP address. Do not duplicate IP addresses. |
| Port No. | Use an integer from "1 to 65535" to enter the port No. of the External Device. |
| Unit ID | Use an integer from 1 to 247 to enter the unit ID of the External Device. |
| Bit manipulation (set/reset) to Holding Register Other bits in this word | Select how other bits in the same word are handled when you manipulate bits in the holding register, from "Clear" or "Do not clear". |
| IEC61131 Syntax | Check this item when you use the IEC61131 grammar for variables. If you check this item, select the address mode from [0-based] or [1-based]. |
| SoMachine Basic Syntax | Check this item when you use SoMachine Basic syntax for variables. Use this setting with M221 series only. |
| Double Word word order | Select the order of checking double word data from "Low word first" or "High word first". |
| Low Security Level | Check this option to decrease the format check level. |

[Max Query] tab



| Setup Items | Setup Description |
|--|---|
| Coil Read | Set the number of max data for device [coil] that can be read for one communication, using 16 to 2000 bits. NOTE • If you check [Single Bit Manipulation in Coil/Discrete Input], set the max query using 1 to 2000. |
| Coil Write | Set the number of max data for device [coil] that can be written for one communication, using 1 to 800 bits. |
| Discrete Input Read | Set the number of max data for device [discrete input] that can be read for one communication, using 16 to 2000 bits. NOTE • If you check [Single Bit Manipulation in Coil/Discrete Input], set the max query using 1 to 2000. |
| Input Register Read | Set the number of max data for device [input register] that can be read for one communication, using 1 to 125 words. |
| Holding Register Read | Set the number of max data for device [holding register] that can be read for one communication, using 1 to 125 words. |
| Holding Register Write | Set the number of max data for device [holding register] that can be written for one communication, using 1 to 100 words. |
| Single Bit manipulation to Coil/Discrete Input | Check this option to read or write the coil or discrete input in bit units. |

4.2 Setup Items in Offline Mode

NOTE

- Refer to the Maintenance/Troubleshooting manual for information on how to enter offline mode or about the operation.
- Cf. Maintenance/Troubleshooting Guide "Offline Mode"
- The number of the setup items to be displayed for 1 page in the offline mode depends on the Display in use. Please refer to the Reference manual for details.

■ Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings] in offline mode. Touch the External Device you want to set from the list that appears.

| Comm. | Device | | | |
|-------------------|--------|-------|----------|------------------------|
| | | | | |
| MODBUS TCP Master | | [TCP] | Page 1/1 | |
| Timeout(s) | | 3 | ▼ ▲ | |
| Retry | | 0 | ▼ ▲ | |
| Wait To Send(ms) | | 0 | ▼ ▲ | |
| | Exit | | Back | 2018/03/15 16:25:06 |

| Setup Items | Setup Description |
|--------------|--|
| Timeout | Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device. |
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting the next commands. |

■ Device Setting


To display the setting screen, touch [Device/PLC Settings] from [Peripheral Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].

(1/2)

| | | | | |
|--------------------------|--------|--------------------------------------|----------|------------------------|
| Comm. | Device | | | |
| MODBUS TCP Master | | [TCP] | Page 1/2 | |
| Device/PLC Name [PLC1] ▼ | | | | |
| IP Address | | 192 | 168 | 0 1 |
| Port No. | | 502 ▼ ▲ | | |
| Unit ID | | 255 ▼ ▲ | | |
| Bit manipulation to HR | | Rest of bits in word are not cleared | | |
| IEC61131 Syntax | | OFF | | |
| SoMachine Syntax | | OFF | | |
| Double Word word order | | Low word first | | |
| Low Security Level | | OFF | | |
| | | | | ➔ |
| Exit | | Back | | 2018/03/15 16:25:12 |

| Setup Items | Setup Description |
|------------------------|---|
| Device/PLC Name | Select the External Device to set. Device/PLC name is the title of the External Device set with GP-Pro EX.(Initial value [PLC1]) |
| IP Address | Set IP address of the External Device. NOTE • Check with the network administrator about the IP address. Do not duplicate IP addresses. |
| Port No. | Use an integer from "1 to 65535" to enter the port No. of the External Device. |
| Unit ID | Use an integer from 1 to 247 to enter the unit ID of the External Device. |
| Bit manipulation to HR | Indicates how other bits in the same word are handled when you manipulate bits in the holding register, by "Rest of bits in word are cleared" or "Rest of bits in word are not cleared".(Not available to set in offline mode.) |
| IEC61131 Syntax | Indicates the usage status of the currently set IEC61131 syntax by ON/OFF. (Not available to set in offline mode.) |
| SoMachine Syntax | Indicates the usage status of the currently set SoMachine Basic syntax by ON/OFF. (Not available to set in offline mode.) |
| Double Word word order | Indicates the currently set order of storing double word data displaying "Low word first" or "High word first". (Not available to set in offline mode.) |
| Low Security Level | Indicates whether the format check level is decreased by ON/OFF. If decreased, ON is displayed. (Not available to set in offline mode.) |

(2/2)

| | | | | |
|---|----------------------------------|-------|----------|---|
| Comm. | Device | | | |
| MODBUS TCP Master | | [TCP] | Page 2/2 | |
| Device/PLC Name <input type="text" value="PLC1"/> | | | | |
| Max Query | | | | |
| Read Coil | 2000 bits | | | |
| Write Coil | 800 bits | | | |
| Read Discrete Input | 2000 bits | | | |
| Read Input Register | <input type="text" value="125"/> | ▼ | ▲ | |
| Read Holding Register | <input type="text" value="125"/> | ▼ | ▲ | |
| Write Holding Register | <input type="text" value="100"/> | ▼ | ▲ | |
| Single Bit manipulation OFF | | | | |
| | | | |  |
| Exit | | Back | | 2018/03/15 16:25:17 |

| Setup Items | Setup Description |
|-------------------------|---|
| Device/PLC Name | Select the External Device to set. Device/PLC name is the title of the External Device set with GP-Pro EX.(Initial value [PLC1]) |
| Read Coil | Displays the number of max data for device [coil] that can be read for one communication.(Not available to set in offline mode.) |
| Write Coil | Displays the number of max data for device [coil] that can be written for one communication.(Not available to set in offline mode.) |
| Read Discrete Input | Displays the number of max data for device [discrete input] that can be read for one communication.(Not available to set in offline mode.) |
| Read Input Register | Set the number of max data for device [input register] that can be read for one communication, using 1 to 125 words. |
| Read Holding Register | Set the number of max data for device [holding register] that can be read for one communication, using 1 to 125 words. |
| Write Holding Register | Set the number of max data for device [holding register] that can be written for one communication, using 1 to 100 words. |
| Single Bit manipulation | Indicates whether to read or write the coil or discrete input in bit units by displaying ON/OFF. If ON is displayed, you can read or write in bit units. (Not available to set in offline mode.) |

5 Supported Devices

Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

5.1 Premium/Quantum/M221 Series

 : This address can be specified as system data area.

| Device | Bit Address | Word address | 32 bits | Remarks |
|------------------|------------------------------------|-----------------|--|---|
| Coil | 000001 - 065536 | 000001 - 065521 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">L / H</div> or <div style="border: 1px solid black; padding: 2px; display: inline-block;">H / L</div> *1 | +1B+1 |
| Discrete Input | 100001 - 165536 | 100001 - 165521 | | +1B+1 *2 |
| Input Register | ----- | 300001 - 365536 | | Bit15 *2 |
| Holding Register | 400001,0 - 465536,15 ^{*3} | 400001 - 465536 | | Bit15 |

*1 You can set the data storing order in word unit of 32-bit data in the Device Setting dialog box.


*2 Write disabled.





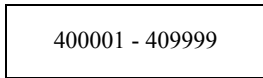


*3 An access method at the time of Bit Set varies depending on the [Rest of the bits in this word] setting of [Device Setting].


- Clear..... Bit15

- Do not clear.....400001,00 - 465536,15

5.2 FCN/FCJ Series

 : This address can be specified as system data area.

| Device | Bit Address | Word address | 32 bits | Remarks |
|------------------|--------------------------|---|---|---|
| Coil | 000001 - 009984 | 000001 - 009969 | |  *2 |
| Discrete Input | 100001 - 109984 | 100001 - 109969 |  |  *2 *3 |
| Input Register | 300001.00 - 309999.15 | 300001 - 309999 | or |  *3 |
| Holding Register | 400001.00 - 409999.15 *4 |  400001 - 409999 |  *1 |  |

- *1 You can set the data storing order in word unit of 32-bit data in the Device Setting dialog box.
- *2 The device access range of the External Device is specified as 1 to 9999, that of the Display, however, as up to 9984, since the Display device is accessible in 16-bit units.
- *3 Write disabled.
- *4 An access method at the time of Bit Set varies depending on the [Rest of the bits in this word] setting of [Device Setting].
 - Clear..... 
 - Do not clear400001,00 - 409999,15

5.3 Supported Function Codes

The supported function code list is shown below.

| Function Code (Hex) | Description |
|---------------------|---|
| FC01(0x01) | Read the ON/OFF status of the slave coil (0X). |
| FC02(0x02) | Read the ON/OFF status of the slave discrete input (1X). |
| FC03(0x03) | Read the description of the slave holding register (4X). |
| FC04(0x04) | Read the description of the slave input register (3X). |
| FC05(0x05) | Change (Write) the slave coil (0X) status to either ON or OFF. |
| FC06(0x06) | Change (write) the description of the slave holding register (4X). |
| FC15(0x0F) | Change (Write) the slave consecutive multiple coils (0X) status to either ON or OFF. |
| FC16(0x10) | Change (write) the descriptions of the slave consecutive multiple holding registers (4X). |
| FC90(0x5A) | Used when SoMachine Basic syntax is selected. |

NOTE • FC15/FC16 are used for writing. FC05/FC06 are used for the External Devices that do not support the function codes mentioned on the left.

5.4 IEC61131Syntax Address Description

The following table shows the equivalence between IEC61131 syntax and MODBUS syntax address descriptions.

| Device | MODBUS Syntax | | | IEC61131 Syntax | | | | |
|-----------------------------|---------------|-------------------------------|---------------|-----------------|-----------------------------|------------------|-----------------------------|------------------|
| | Format | Range | First element | Format | 0 start | | 1 start | |
| | | | | | Range | First element | Range | First element |
| Coil | 000001+i | i = 0 to 65535 | 000001 | %Mi | i = 0 to 65535 | %M00000 | i = 1 to 65536 | %M00001 |
| Discrete Input | 100001+i | i = 0 to 65535 | 100001 | - | - | - | - | - |
| Input Register (Word) | 300001+i | i = 0 to 65535 | 300001 | - | - | - | - | - |
| Input Register (Word bit) | 300001+i,j | i = 0 to 65535 j = 0 to 15 | 300001,00 | - | - | - | - | - |
| Holding Register (Word) | 400001+i | i = 0 to 65535 | 400001 | %MWi | i = 0 to 65535 | %MW00000 | i = 1 to 65536 | %MW00001 |
| Holding Register (Word bit) | 400001+i,j | i = 0 to 65535 j = 0 to 15 | 400001,00 | %Mwi:Xj | i = 0 to 65535 j=0 to 15 | %MW00000: X00 | i = 1 to 65535 j=0 to 15 | %MW00001 :X00 |



NOTE

- The addresses 100000 and 300000 cannot be accessed using IEC61131 syntax.
 - If you apply IEC61131 syntax to a project that has a discrete input or input register already set, the addresses become "-Undefined-".
-

5.5 SoMachine Basic syntax

SoMachine Basic syntax is available only for M221 series.

- TM221ME16R•/TM221ME16T•

| Device | Bit Address | Word Address | 32 bits | Notes | |
|-----------------------|---------------------------------|---------------------------|---|-------|---|
| Memory bits | %M00000 - %M01023 | ----- | <div style="display: flex; flex-direction: column; align-items: center;"> [L/H] or [H/L] *1 </div> | | |
| Memory words | %MW00000.00 - %MW07999.15 | %MW00000 - %MW07999 | | |  *2 *3 |
| Constant words | %KW00000 - %KW00511.15 | %KW00000 - %KW00511 | | | *4 *5 |
| Digital inputs | %I000.000 - %I000.007 | ----- | | | *5 *6 |
| | %I001.000 - %I014.031 | ----- | | | *7 |
| Digital outputs | %Q000.000 - %Q000.007 | ----- | | | *6 |
| | %Q001.000 - %Q014.031 | ----- | | | *7 |
| Analog inputs | %IW000.000.00 - %IW000.001.15 | %IW000.000 - %IW000.001 | | | *5 *6 |
| | %IW001.000.00 - %IW014.007.15 | %IW001.000 - %IW014.007 | | | *6 *7 |
| Analog outputs | %QW001.000.00 - %QW014.003.15 | %QW001.000 - %QW014.003 | | | *6 *7 |
| System bits | %S00000 - %S00159 | ----- | | | |
| System words | %SW00000.00 - %SW00233.15 | %SW00000 - %SW00233 | | |  *3 |
| Input channel status | %IWS000.000.00 - %IWS000.001.15 | %IWS000.000 - %IWS000.001 | | | *5 *6 |
| | %IWS001.000.00 - %IWS014.007.15 | %IWS001.000 - %IWS014.007 | | | *6 *7 |
| Output channel status | %QWS001.000.00 - %QWS014.003.15 | %QWS001.000 - %QWS014.003 | | *6 *7 | |

*1 High and low relationship of the stored data is specified by the [Double Word word order] setting of [Device Setting].

 "4.1 Setup Items in GP-Pro EX" (page 22)

*2 To use addresses %MD00000 - %MD07998 and %MF00000 - %MF07998 on the External Device, select addresses %MW00000 - %MW07998. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*3 The access method for Bit Set varies depending on the [Rest of the bits in this word] setting in the [Individual Device Setting] dialog box.

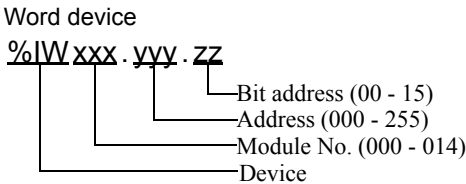
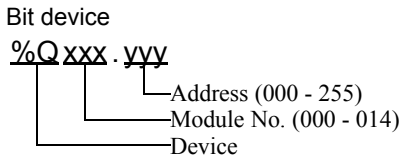
- Clear..... 15

- Do not clear..... When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address ON, and then returns the resulting word address to the External Device. Note that the resulting data may not be correct if you write to the word address from the External Device while the Display is reading from and writing to the External Device.

*4 To use addresses %KD00000 - %KD00510 and %KF00000 - %KF00510 on the External Device, select addresses %KW00000 - %KW00510. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).





*5 Write disabled

*6 The device address structure is as follows.
The module number is mapped to the attached unit.



*7 Available for use only when an I/O module is connected.

- TM221ME32TK


| Device | Bit Address | Word Address | 32 bits | Notes |
|-----------------------|---------------------------------|---------------------------|---|---|
| Memory bits | %M00000 - %M01023 | ----- | | |
| Memory words | %MW00000.00 - %MW07999.15 | %MW00000 - %MW07999 | |  *2 *3 |
| Constant words | %KW00000 - %KW00511.15 | %KW00000 - %KW00511 | | *4 *5 |
| Digital inputs | %I000.000 - %I000.015 | ----- | | *5 *6 |
| | %I001.000 - %I014.031 | ----- | | *7 |
| Digital outputs | %Q000.000 - %Q000.015 | ----- | | *6 |
| | %Q001.000 - %Q014.031 | ----- | | *7 |
| Analog inputs | %IW000.000.00 - %IW000.001.15 | %IW000.000 - %IW000.001 |  | *5 *6 |
| | %IW001.000.00 - %IW014.007.15 | %IW001.000 - %IW014.007 | or  | *6 *7 |
| Analog outputs | %QW001.000.00 - %QW014.003.15 | %QW001.000 - %QW014.003 | *1 | *6 *7 |
| System bits | %S00000 - %S00159 | ----- | | |
| System words | %SW00000.00 - %SW00233.15 | %SW00000 - %SW00233 | |  *3 |
| Input channel status | %IWS000.000.00 - %IWS000.001.15 | %IWS000.000 - %IWS000.001 | | *5 *6 |
| | %IWS001.000.00 - %IWS014.007.15 | %IWS001.000 - %IWS014.007 | | *6 *7 |
| Output channel status | %QWS001.000.00 - %QWS014.003.15 | %QWS001.000 - %QWS014.003 | | *6 *7 |

*1 High and low relationship of the stored data is specified by the [Double Word word order] setting of [Device Setting].

 "4.1 Setup Items in GP-Pro EX" (page 22)

*2 To use addresses %MD00000 - %MD07998 and %MF00000 - %MF07998 on the External Device, select addresses %MW00000 - %MW07998. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*3 The access method for Bit Set varies depending on the [Rest of the bits in this word] setting in the [Individual Device Setting] dialog box.

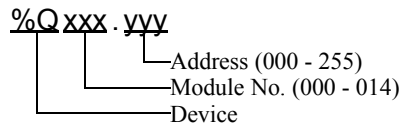
- Clear..... 

- Do not clear..... When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address ON, and then returns the resulting word address to the External Device. Note that the resulting data may not be correct if you write to the word address from the External Device while the Display is reading from and writing to the External Device.

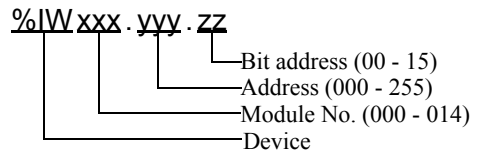
*4 To use addresses %KD00000 - %KD00510 and %KF00000 - %KF00510 on the External Device, select addresses %KW00000 - %KW00510. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

- *5 Write disabled
- *6 The device address structure is as follows.
The module number is mapped to the attached unit.

Bit device







Word device



- *7 Available for use only when an I/O module is connected.

• TM221CE16•

| Device | Bit Address | Word Address | 32 bits | Notes |
|-----------------------|---------------------------------|---------------------------|------------|---|
| Memory bits | %M00000 - %M01023 | ----- | | |
| Memory words | %MW00000.00 - %MW07999.15 | %MW00000 - %MW07999 | |  *2 *3 |
| Constant words | %KW00000 - %KW00511.15 | %KW00000 - %KW00511 | | *4 *5 |
| Digital inputs | %I000.000 - %I000.008 | ----- | | *5 *6 |
| | %I001.000 - %I014.031 | ----- | | *5 *6 *7 |
| Digital outputs | %Q000.000 - %Q000.006 | ----- | | *6 |
| | %Q001.000 - %Q014.031 | ----- | | *6 *7 |
| Analog inputs | %IW000.000.00 - %IW000.001.15 | %IW000.000 - %IW000.001 | | *5 *6 |
| | %IW001.000.00 - %IW014.007.15 | %IW001.000 - %IW014.007 | | *5 *6 *7 |
| | %IW000.100.00 - %IW000.101.15 | %IW000.100 - %IW000.101 | L/H | *5 *6 *8 |
| Analog outputs | %QW001.000.00 - %QW014.003.15 | %QW001.000 - %QW014.003 | H/L |  *3 *6 *7 |
| | %QW000.100.00 - %QW000.101.15 | %QW000.100 - %QW000.101 | *1 |  *3 *6 *9 |
| System bits | %S00000 - %S00159 | ----- | | |
| System words | %SW00000.00 - %SW00233.15 | %SW00000 - %SW00233 | |  *3 |
| Input channel status | %IWS000.000.00 - %IWS000.001.15 | %IWS000.000 - %IWS000.001 | | *5 *6 |
| | %IWS001.000.00 - %IWS014.007.15 | %IWS001.000 - %IWS014.007 | | *5 *6 *7 |
| | %IWS000.100.00 - %IWS000.101.15 | %IWS000.100 - %IWS000.101 | | *5 *6 *8 |
| Output channel status | %QWS001.000.00 - %QWS014.003.15 | %QWS001.000 - %QWS014.003 | | *5 *6 *7 |
| | %QWS000.100.00 - %QWS000.101.15 | %QWS000.100 - %QWS000.101 | | *5 *6 *9 |

*1 High and low relationship of the stored data is specified by the [Double Word word order] setting of [Device Setting].

 "4.1 Setup Items in GP-Pro EX" (page 22)

*2 To use addresses %MD00000 - %MD07998 and %MF00000 - %MF07998 on the External Device, select addresses %MW00000 - %MW07998. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*3 The access method for Bit Set varies depending on the [Rest of the bits in this word] setting in the [Individual Device Setting] dialog box.

- Clear..... **15**

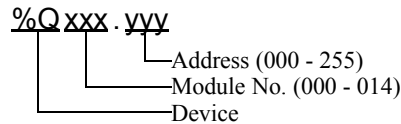
- Do not clear..... When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address ON, and then returns the resulting word address to the External Device. Note that the resulting data may not be correct if you write to the word address from the External Device while the Display is reading from and writing to the External Device.

*4 To use addresses %KD00000 - %KD00510 and %KF00000 - %KF00510 on the External Device, select addresses %KW00000 - %KW00510. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

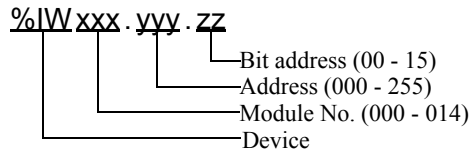
*5 Write disabled

*6 The device address structure is as follows.
The module number is mapped to the attached unit.

Bit device



Word device







*7 Available for use only when an I/O module is connected.

*8 Available for use only when TMC2AI2, TMC2HOIS01, TMC2PACK01 or TMC2TI2 is connected.

*9 Available for use only when TMC2AQ2V or TMC2AQ2C is connected.

• TM221CE24•

| Device | Bit Address | Word Address | 32 bits | Notes |
|-----------------------|---------------------------------|---------------------------|--------------|---|
| Memory bits | %M00000 - %M01023 | ----- | | |
| Memory words | %MW00000.00 - %MW07999.15 | %MW00000 - %MW07999 | |  *2 *3 |
| Constant words | %KW00000 - %KW00511.15 | %KW00000 - %KW00511 | | *4 *5 |
| Digital inputs | %I000.000 - %I000.013 | ----- | | *5 *6 |
| | %I001.000 - %I014.031 | ----- | | *5 *6 *7 |
| Digital outputs | %Q000.000 - %Q000.009 | ----- | | *6 |
| | %Q001.000 - %Q014.031 | ----- | | *6 *7 |
| Analog inputs | %IW000.000.00 - %IW000.001.15 | %IW000.000 - %IW000.001 | | *5 *6 |
| | %IW001.000.00 - %IW014.007.15 | %IW001.000 - %IW014.007 | | *5 *6 *7 |
| | %IW000.100.00 - %IW000.101.15 | %IW000.100 - %IW000.101 | [L/H] | *5 *6 *8 |
| Analog outputs | %QW001.000.00 - %QW014.003.15 | %QW001.000 - %QW014.003 | [H/L] |  *3 *6 *7 |
| | %QW000.100.00 - %QW000.101.15 | %QW000.100 - %QW000.101 | *1 |  *3 *6 *9 |
| System bits | %S00000 - %S00159 | ----- | | |
| System words | %SW00000.00 - %SW00233.15 | %SW00000 - %SW00233 | |  *3 |
| Input channel status | %IWS000.000.00 - %IWS000.001.15 | %IWS000.000 - %IWS000.001 | | *5*6 |
| | %IWS001.000.00 - %IWS014.007.15 | %IWS001.000 - %IWS014.007 | | *5 *6 *7 |
| | %IWS000.100.00 - %IWS000.101.15 | %IWS000.100 - %IWS000.101 | | *5 *6 *8 |
| Output channel status | %QWS001.000.00 - %QWS014.003.15 | %QWS001.000 - %QWS014.003 | | *5 *6 *7 |
| | %QWS000.100.00 - %QWS000.101.15 | %QWS000.100 - %QWS000.101 | | *5 *6 *9 |

*1 High and low relationship of the stored data is specified by the [Double Word word order] setting of [Device Setting].

 "4.1 Setup Items in GP-Pro EX" (page 22)

*2 To use addresses %MD00000 - %MD07998 and %MF00000 - %MF07998 on the External Device, select addresses %MW00000 - %MW07998. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*3 The access method for Bit Set varies depending on the [Rest of the bits in this word] setting in the [Individual Device Setting] dialog box.

- Clear..... **15**

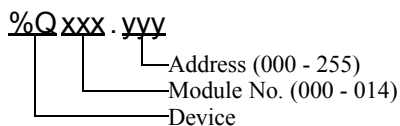
- Do not clear..... When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address ON, and then returns the resulting word address to the External Device. Note that the resulting data may not be correct if you write to the word address from the External Device while the Display is reading from and writing to the External Device.

*4 To use addresses %KD00000 - %KD00510 and %KF00000 - %KF00510 on the External Device, select addresses %KW00000 - %KW00510. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

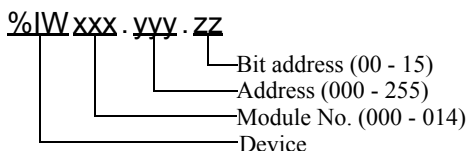
*5 Write disabled

*6 The device address structure is as follows.
The module number is mapped to the attached unit.

Bit device



Word device







*7 Available for use only when an I/O module is connected.

*8 Available for use only when TMC2AI2, TMC2HOIS01, TMC2PACK01 or TMC2TI2 is connected.

*9 Available for use only when TMC2AQ2V or TMC2AQ2C is connected.

• TM221CE40•

| Device | Bit Address | Word Address | 32 bits | Notes |
|-----------------------|--|--|------------------------|--|
| Memory bits | %M00000 - %M01023 | ----- | L/H or H/L *1 | |
| Memory words | %MW00000.00 - %MW07999.15 | %MW00000 - %MW07999 | |  *2 *3 |
| Constant words | %KW00000 - %KW00511.15 | %KW00000 - %KW00511 | | *4 *5 |
| Digital inputs | %I000.000 - %I000.023 | ----- | | *5 *6 |
| | %I001.000 - %I014.031 | ----- | | *5 *6 *7 |
| Digital outputs | %Q000.000 - %Q000.015 | ----- | | *6 |
| | %Q001.000 - %Q014.031 | ----- | | *6 *7 |
| Analog inputs | %IW000.000.00 - %IW000.001.15 | %IW000.000 - %IW000.001 | | *5 *6 |
| | %IW001.000.00 - %IW014.007.15 | %IW001.000 - %IW014.007 | | *5 *6 *7 |
| | %IW000.100.00 - %IW000.101.15 %IW000.200.00 - %IW000.201.15 | %IW000.100 - %IW000.101 %IW000.200 - %IW000.201 | | *5 *6 *8 |
| Analog outputs | %QW001.000.00 - %QW014.003.15 | %QW001.000 - %QW014.003 | |  *3 *6 *7 |
| | %QW000.100.00 - %QW000.101.15 %QW000.200.00 - %QW000.201.15 | %QW000.100 - %QW000.101 %QW000.200 - %QW000.201 | |  *3 *6 *9 |
| | | | | |
| System bits | %S00000 - %S00159 | ----- | | |
| System words | %SW00000.00 - %SW00233.15 | %SW00000 - %SW00233 | |  *3 |
| Input channel status | %IWS000.000.00 - %IWS000.001.15 | %IWS000.000 - %IWS000.001 | | *5 *6 |
| | %IWS001.000.00 - %IWS014.007.15 | %IWS001.000 - %IWS014.007 | *5 *6 *7 | |
| | %IWS000.100.00 - %IWS000.101.15 %IWS000.200.00 - %IWS000.201.15 | %IWS000.100 - %IWS000.101 %IWS000.200 - %IWS000.201 | *5 *6 *8 | |
| Output channel status | %QWS001.000.00 - %QWS014.003.15 | %QWS001.000 - %QWS014.003 | *5 *6 *7 | |
| | %QWS000.100.00 - %QWS000.101.15 %QWS000.200.00 - %QWS000.201.15 | %QWS000.100 - %QWS000.101 %QWS000.200 - %QWS000.201 | *5 *6 *9 | |

*1 High and low relationship of the stored data is specified by the [Double Word word order] setting of [Device Setting].

☞ "4.1 Setup Items in GP-Pro EX" (page 22)

*2 To use addresses %MD00000 - %MD07998 and %MF00000 - %MF07998 on the External Device, select addresses %MW00000 - %MW07998. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*3 The access method for Bit Set varies depending on the [Rest of the bits in this word] setting in the [Individual Device Setting] dialog box.

- Clear..... Bi 15

- Do not clear..... When bits are written, the Display reads the corresponding word address from the External Device, sets particular bits of that word address ON, and then returns the resulting word address to the External Device. Note that the resulting data may not be correct if you write to the word address from the External Device while the Display is reading from and writing to the External Device.

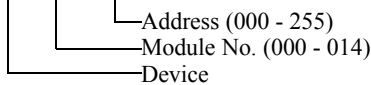
*4 To use addresses %KD00000 - %KD00510 and %KF00000 - %KF00510 on the External Device, select addresses %KW00000 - %KW00510. Then, set the [Data type] to either [32bit Dec]/[32bit Hex](%MD) or [32bit Float](%MF).

*5 Write disabled

*6 The device address structure is as follows.
The module number is mapped to the attached unit.

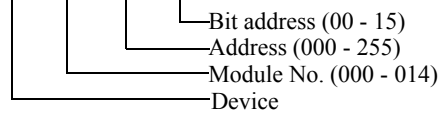
Bit device

%Q xxx . yyy



Word device

%IW xxx . yyy . zz



*7 Available for use only when an I/O module is connected.

*8 Available for use only when TMC2AI2, TMC2HOIS01, TMC2PACK01 or TMC2TI2 is connected.

*9 Available for use only when TMC2AQ2V or TMC2AQ2C is connected.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.

☞ "Manual Symbols and Terminology"

6 Device Code and Address Code

Use device code and address code when you set "Device Type & Address" for the address type of the data display or other devices.

6.1 Premium/Quantum/M221 Series

| Device | Device Name | Device Code (HEX) | Address Code |
|------------------|-------------|-------------------|---|
| Coil | 0 | 0080 | Value of (word address - 1) divided by 16 |
| Discrete Input | 1 | 0081 | Value of (word address - 1) divided by 16 |
| Input Register | 3 | 0001 | Value of (word address - 1) |
| Holding Register | 4 | 0000 | Value of (word address - 1) |

6.2 FCN/FCJ Series

| Device | Device Name | Device Code (HEX) | Address Code |
|------------------|-------------|-------------------|---|
| Coil | 0 | 0080 | Value of (word address - 1) divided by 16 |
| Discrete Input | 1 | 0081 | Value of (word address - 1) divided by 16 |
| Input Register | 3 | 0001 | Value of (word address - 1) |
| Holding Register | 4 | 0000 | Value of (word address - 1) |

6.3 SoMachine Basic Syntax

| Device | Device Name | Device Code (HEX) | Address Code |
|-----------------------|-------------|-------------------|-----------------------|
| Memory words | %MW | 0000 | Value of word address |
| Constant words | %KW | 0002 | Value of word address |
| Analog inputs | %IW | 0008 | Value of word address |
| Analog outputs | %QW | 0009 | Value of word address |
| System words | %SW | 0004 | Value of word address |
| Input channel status | %IWS | 000A | Value of word address |
| Output channel status | %QWS | 000B | Value of word address |

7 Error Messages

Error messages are displayed on the screen of the Display as follows: "No. : Device Name: Error Message(Error Occurrence Area)". Each description is shown below.

| Item | Description |
|-----------------------|--|
| No. | Error No. |
| Device Name | Name of the External Device where an error has occurred. Device/PLC name is the title of the External Device set with GP-Pro EX.(Initial value [PLC1]) |
| Error Message | Displays messages related to an error that has occurred. |
| Error Occurrence Area | <p>Displays the IP address or device address of the External Device where an error has occurred, or error codes received from the External Device.</p> <p>NOTE</p> <ul style="list-style-type: none"> • IP addresses are displayed as "IP address (Decimal): MAC address (Hex)". • Device addresses are displayed as "Address: Device address". • Received error codes are displayed as "Decimal [Hex]". |

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2[02H])"

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- NOTE**
- Refer to your External Device manual for details on received error codes.
 - Refer to "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.
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